

In the Claims

1. (Cancelled)

2. (Currently Amended) A non-oriented electrical steel sheet comprising: on a mass percent basis,

C: 0.02% or less (~~including 0%~~);

Si: 4.5% or less;

Mn: 3% or less;

Al: 3% or less;

P: 0.5% or less (~~including 0%~~);

Ni: 5% or less (~~including 0%~~); and

Cu: 0.2% to 4%,

wherein a volume ratio of Cu precipitates in crystal grain interior is in the range of from 0.2% to 2%, and

an average particle size of the Cu precipitates is in the range of from 1 to 20 nm.

3. (Currently Amended) A non-oriented electrical steel sheet comprising: on a mass percent basis,

C: 0.02% or less (~~including 0%~~);

Si: 4.5% or less;

Mn: 3% or less;

Al: 3% or less;

P: 0.5% or less (~~including 0%~~);

Ni: 5% or less (~~including 0%~~); and

Cu: 0.2% to 4%,

wherein the yield stress is not less than CYS (MPa) represented by the following formula 1,
a volume ratio of Cu precipitates in crystal grain interior is in the range of from 0.2% to 2%,
and

an average particle size of the Cu precipitates is in the range of from 1 to 20 nm:

note

$$\text{CYS} = 180 + 5,600[\%C] + 95[\%Si] + 50[\%Mn] + 37[\%Al] + 435[\%P] + 25[\%Ni] + 22d^{-1/2} \dots (\text{Formula 1})$$

where d is an average grain diameter (mm) of the crystal grains.

4. (Currently Amended) A non-oriented electrical steel sheet comprising: on a mass percent basis,

C: 0.02% or less (~~including 0%~~);

Si: 4.5% or less;

Mn: 3% or less;

Al: 3% or less;

P: 0.5% or less (~~including 0%~~);

Ni: 5% or less (~~including 0%~~); and

Cu: 0.2% to 4%,

~~Wherein, after aging treatment is performed at 500°C for 10 hours, the yield stress of the steel sheet is not less than CYS (MPa) represented by the following formula 1:~~

~~note~~

$$\text{CYS} = 180 + 5,600[\%C] + 95[\%Si] + 50[\%Mn] + 37[\%Al] + 435[\%P] + 25[\%Ni] + 22d^{-1/2} \dots (\text{Formula 1})$$

~~where d is an average grain diameter (mm) of crystal grains~~

wherein the steel sheet forms Cu precipitates in crystal grain interior having a volume ratio of 0.2% to 2% and an average particle size of 1 to 20 nm by aging treatment at 500°C for 10 hours.

5. (Currently Amended) The non-oriented electrical steel sheet according to one of Claims [[1]] 2 to 4, further comprising at least one of Zr, V, Sb, Sn, Ge, B, Ca, a rare earth element, and Co as a component,

wherein the content of each of Zr and V is 0.1% to 3%,

the content of each of Sb, Sn, and Ge is 0.002% to 0.5%,

the content of each of B, Ca, and the rare earth element is 0.001% to 0.01%, and

the content of Co is 0.2% to 5%.

6.-15. (Cancelled)